Biotechnologies towards Sustainable Development in Malaysia

Zarina Zainuddin

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Biotechnology potential tropical mangrove plant with special emphasis on *Avicennia alba* in Tanjung Lumpur, Pahang Malaysia

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Introduction

Antioxidant is an essential compound because it serves as a type of defence mechanism in the body. Many studies have shown that antioxidant compounds prevent body from getting cancer, heart disease, ageing as well as other chronic diseases (Devasagayam *et al.,* 2004; Agoramoorthy *et al.,* 2008). These diseases are the results of free radicals reaction with the cells inside the body. The free radicals such as peroxide and hydroperoxide in the body come from various sources. Everyday people are exposed to huge amount of free radicals from pollutions created by cigarette smokes, radiations, automobile emissions and sometimes pesticides and preservatives from food intake. Free radicals that exist in the body are very dangerous as they may oxidize DNA, nucleic acid, proteins or lipids and possibly contribute to the ageing process and development of other chronic diseases. Human bodies have a natural defense system against these free radicals which is known as antioxidant. The presence of antioxidant in the body will help to neutralize the free radicals and thus prevent much cellular damage. Free radicals have unpaired electrons which are not in stable form. Because these radicals are not stable, they are likely to take electrons from other atoms, create chain reactions and transform those atoms into secondary free radicals that